There are two classifications of two-lane highways based on the perceived purpose of the facility by the highway user. Class I consists of those facilities where *mobility* is the primary function. On these highways LOS is defined in terms of both average travel speed and percent time-spent-following. Class II is comprised of highways for which *accessibility* is more important than mobility. For these highways, only percent time-spent-following is considered when determining LOS. Additionally, users of Class II highways tolerate a higher percent time-spent-following since these facilities tend to service shorter trips and different purposes than Class I highways.

Two-lane highways can be analyzed as either two-way segments or directional segments. In general, segments that are at least two miles long and have either level or rolling terrain can be analyzed as two-way segments and segments with mountainous terrain are analyzed as specific upgrade or downgrade directional segments. Of course, "directional" segments still have two-way traffic.

Two-Way Segments

Free flow speed (FFS) for a two-lane highway is best determined by direct measurement in the field when two-way flows are 200 pc/h or less. If the FFS is measured when two-way flows are more than 200 pc/h, the FFS can be calculated using Equation 20-1.

$$FFS = S_{FM} + 0.00776\frac{V_f}{f_{HV}} \qquad (20\text{-}1)$$

where

FFS = estimated free-flow speed (mi/h),
S_{FM} = mean speed of traffic measured in the field (mi/h),
V_f = observed flow rate for the period when field data were obtained (veh/h), and
f_{HV} = heavy-vehicle adjustment factor, determined as shown in Equation 20-4).

If no field data is available, FFS can be estimated using an assumed BFFS and adjustments for lane and shoulder width and access points as given in HCM Equation 20-2. No guidance is provided for choosing a BFFS due to the wide variance in values**.** Estimates should be based on speed data, knowledge of local operating conditions, design speed, and posted speed limit.

$$FFS = BFFS - f_{LS} - f_A \qquad (20\text{-}2)$$

where

FFS = estimated FFS (mi/h),
BFFS = base FFS (mi/h),
f_{LS} = adjustment for lane width and shoulder width, from Table A24, and
f_A = adjustment for access points, from Table A25.